

Recovery Plan for the Cahaba Shiner (*Notropis cahabae*)

Available at: https://ecos.fws.gov/docs/recovery_plan/920423.pdf

Original Approved: April 23, 1992

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AMENDMENT 1

We have analyzed the best available information that indicates the need to amend recovery criteria for this species since the recovery plan was completed. In this recovery plan modification, we reference the original criteria; document the criteria amendments; include rationale supporting the recovery plan modification. We document information we considered in finalizing criteria amendments; and, include any updated information. The modification is shown as an addendum that supplements the recovery plan, superseding only Part II, pages 5 of the recovery plan (U.S. Fish and Wildlife Service, USFWS 1992). Recovery plans are a non-regulatory document that provides guidance on how best to help recover species.

For
U.S. Fish and Wildlife Service
Atlanta, Georgia

Approved: _____

Acting

Regional Director, U.S. Fish and Wildlife Service

Date: _____

9/25/19

METHODOLOGY USED TO COMPLETE THE RECOVERY PLAN AMENDMENT

All relevant documents and data, including reports from state agencies and non-governmental partners, were considered during this recovery plan review and modification. Species experts, state agencies, and other stakeholders were notified and asked to provide any recent information. Primary sources of information included this species' most recent 5-year review (USFWS 2016) and the original recovery plan (USFWS 1992).

ADEQUACY OF RECOVERY CRITERIA

Section 4(f)(1)(B)(ii) of the Endangered Species Act (Act) requires that each recovery plan shall incorporate, to the maximum extent practicable, "objective, measurable criteria which, when met, would result in a determination...that the species be removed from the list." Legal challenges to recovery plans (see *Fund for Animals v. Babbitt*, 903 F. Supp. 96 (D.D.C. 1995))

and a Government Accountability Audit (GAO 2006) also have affirmed the need to frame recovery criteria in terms of threats assessed under the five delisting factors in section 4(a)(1).

Recovery Criteria

The original recovery plan (https://ecos.fws.gov/docs/recovery_plan/920423.pdf) (USFWS 1992) only contains downlisting criteria for the species, see page 5.

Synthesis

The Cahaba shiner occurs in two drainages in north Alabama: the Cahaba River (in 76 mi (122.3 km) including the immediate lower reach (< 1 mi ; 1.6 km) of Shades Creek; and the Locust Fork of the Black Warrior River (in 73 mi (117.5 km) including the lower 5 mi (8 km) of Blackburn Fork. The species is locally distributed within these drainages near shoal microhabitats. Species specific and habitat data is summarized in the 2016 5-Year Review (USFWS 2016). However, recent survey information (Kuhajda in 2017/2018 pers. comm.) indicated that population numbers in the Cahaba River were consistent with sampling in previous years with a more robust population documented in the Locust Fork drainage (Kuhajda 2018, pers. comm.; Shepard *et al* 2018; Nensial 2018, pers. comm.).

The Cahaba shiner has a localized range and is not homogeneously distributed throughout its range. Consequently, the species is vulnerable to extirpation from catastrophic events which have been noted throughout the watersheds over the last 100 years (Shepard *et al.* 2018, 1997; Hudgins *et al.* 1984), including toxic spills, reduced water quality, increased effluents related to stormwater runoff, flooding and pollution from waste water treatment plants (WWTP), and additional water quality degradation from urbanization, industrial sites, and historical and ongoing coal mining all which *in toto* are very significant stresses on the systems.

AMENDED RECOVERY CRITERIA

Recovery criteria serve as objective, measurable guidelines to assist in determining when an endangered species has recovered to the point that it may be downlisted to threatened, or that the protections afforded by the Act are no longer necessary and the Cahaba shiner may be delisted. Delisting is the removal of a species from the Federal Lists of Endangered and Threatened Wildlife and Plants. Downlisting is the reclassification of a species from endangered to threatened. The term “endangered species” means any species (species, sub-species, or DPS) which is in danger of extinction throughout all or a significant portion of its range. The term “threatened species” means any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Revisions to the Lists, including delisting or downlisting a species, must reflect determinations made in accordance with sections 4(a)(1) and 4(b) of the Act. Section 4(a)(1) requires that the Secretary determine whether a species is an endangered species or threatened species (or not) because of threats to the species. Section 4(b) of the Act requires that the determination be made on the basis of the best scientific and commercial data available. Thus, while recovery plans provide important guidance to the Service, States, and other partners on methods of minimizing

threats to listed species and measurable objectives against which to measure progress towards recovery, they are guidance and not regulatory documents.

Recovery criteria should help indicate when we would anticipate that an analysis of the species' status under section 4(a)(1) would result in a determination that the species is no longer an endangered species or threatened species. A decision to revise the status of or remove a species from the Federal Lists of Endangered and Threatened Wildlife and Plants, however, is ultimately based on an analysis of the best scientific and commercial data then available, regardless of whether that information differs from the recovery plan. When changing the status of a species, we first propose the action in the *Federal Register* to seek public comment and peer review, followed by a final decision announced in the *Federal Register*.

Herein, we provide amended downlisting and delisting criteria for the Cahaba shiner, which will supersede those included in the Cahaba shiner recovery plan as follows:

Downlisting Recovery Criteria

Criterion 1. Cahaba shiner populations in the Cahaba River and Locust Fork River systems exhibit stable or increasing trends over 10-year period, evidenced by natural recruitment, and multiple age classes (Factors A, D, E).

Criterion 2. The Cahaba River and Locust Fork drainages are protected from water quality degradation and other foreseeable threats. Protected is defined as having enough control over the geographic area in question that adverse impacts to the water quality, water quantity, geomorphic design of the water course, and substrate are unlikely to occur (Factors A, D).

Delisting Criteria

In addition to meeting downlisting criteria 1-2, Cahaba shiner will be considered for delisting when:

Criterion 3. Three additional populations in separate drainages, are discovered or established, and are shown to have a stable or increasing trend over a 10-year period, evidenced by natural recruitment, and multiple age classes (Factors A, D, E).

Justification of Criteria

The downlisting and delisting recovery criteria reflect the best available and most recent information on the Cahaba shiner. These criteria address the five factors described in section 4(a)(1) of the Act and incorporate the conservation principles of representation, resiliency, and redundancy (Wolf *et al.* 2015).

Downlisting

Criterion 1: The Cahaba shiner is only known to occur in two drainages in north Alabama. The assurance that each of these populations is viable into the foreseeable future through long-term documentation is needed for adequate representation and redundancy in the species.

Criterion 2: Water quality degradation remains the primary threat to existing populations. Long-term habitat protection will ensure that adequate habitat and conditions favorable for the Cahaba shiner are maintained into the future by supporting resilience of individual populations.

Delisting

In addition to meeting the delisting criteria above (1-2):

Criterion 3: The species is endemic to two highly impacted river systems. The species has specific and localized habitat and is vulnerable to extirpation from catastrophic events, such as toxic spills, or other changes in water quality. Thus, additional viable populations in other distinct drainages are needed to offset the potential loss of populations from catastrophic events. The establishment of five viable populations over the long-term contributes to the species' overall representation and redundancy and ensures its persistence into the foreseeable future.

Rationale for Recovery Criteria

The recovery criteria reflect the best available and most current information on the Cahaba shiner and address all of the five listing factors relevant to the species. These recovery criteria address the biodiversity principles of representation, resiliency, and redundancy (Schaffer and Stein 2000) as these concepts relate to abundance, distribution, diversity, etc. Representation involves conserving the breadth of the genetic makeup of the species to conserve its adaptive capabilities. Resiliency involves ensuring that each population is sufficiently large enough to withstand stochastic events. Redundancy involves ensuring a sufficient number of populations to provide a margin of safety for the species to withstand catastrophic events. This species is currently limited to two isolated populations that continue to be threatened by water quality degradation, exacerbated by expansion of urbanization, industrialization, and a multitude of other factors. The documented viability and protection of these two known populations into the foreseeable future is essential for downlisting and ensuring that these three biodiversity principles are addressed. The discovery or establishment of at least three other populations in separate drainages, which are documented to be viable over the long-term, will contribute to the species' representation and representation and serve as buffer against any catastrophic events.

LITERATURE CITED

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